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**Notice of Allowability**

Application No.

09/551,233

Examiner

Hsien-ming Lee

Applicant(s)

MATSUURA ET AL.

Art Unit

2823

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/25/2005.
2. ☒ The allowed claim(s) is/are 12.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☒ including changes required by the ~~attached Examiner's Amendment~~ / Comment ~~or~~ in the Office action of Paper No./Mail Date 5.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                     | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

**HSIEN-MING LEE**  
**PRIMARY EXAMINER**

3/31/2005

## DETAILED ACTION

### *Remarks*

1. Applicants' cancellation to claims 1-11 and 13-28 is acknowledged. Claim 12 is pending in the application.
2. Applicants are required to submit corrected drawings as the drawings, which were submitted on 4/17/2000, have been objected by the examiner as set forth in the Office action of Paper No. 5. Also see the notice of draftsperson's patent drawing review.

### *Allowable Subject Matter*

3. Claim 12 is allowed.
4. The following is an examiner's statement of reasons for allowance:

The closest prior art of record, Cuchiaro et al. (US 6, 165,802), teach a method of fabricating a semiconductor device having a ferroelectric capacitor 118, as stated previously.

In contrast, Cuchiaro et al. do not teach crystallizing the ferroelectric film under a reduced total pressure in the range between 1 Torr and 40 Torr such that peeling of the ferroelectric film is substantially reduced.

Chu et al. to US 6,287,637 teach crystallizing the PZT ferroelectric film under a reduced oxygen partial pressure atmosphere (col. 6, lines 41-47) in the range of  $10^{-4}$  to 100 Torr, wherein the reduced oxygen pressure is a partial not a total pressure. Although Chu et al. suggest that crystallizing the ferroelectric film can be performed in a pure oxygen ambient, Chu et al. however, do not teach that the reduced total pressure of oxygen is in the range between 1 Torr and 40 Torr.

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In the examiner's opinion, it would not have been obvious to one of the ordinary skill in the art, at the time of the invention was made, to modify the teachings of Cuchiario et al. with the teachings of Chu et al.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-ming Lee whose telephone number is 571-272-1863. The examiner can normally be reached on Tuesday-Thursday (8:00 ~ 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hsien-ming Lee  
Primary Examiner  
Art Unit 2823

May 31, 2005

**HSIEN-MING LEE**  
**PRIMARY EXAMINER**

*5/31/2005*